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Situational Awareness:

Watchfulness is the best defense against bogus parts. by Dave Higdon

A helicopter goes down and investigators find the blade clamps failed to meet certification standards. An engine fails and the paper trail on the failed part ends without a connection to the manufacturer whose name is stamped on the part. A planemaker conducts a routine quality check of a box of new parts from a supplier and finds they fail to meet standards...

Do these scenarios sound like a nightmare in the making? Do they make you wonder whether the plane you'll fly on next is actually up to snuff?

You're not alone in your concerns, though you may wonder given how little you've heard of this problem – the problem of so-called bogus or counterfeit aircraft parts.

Thanks in part to the do-anything-for-a-buck morals of some businesses, the world is awash in counterfeit products – from designer purses and shoes, to computer components, to aircraft engine and airframe spares. However, unlike the likely failure of a high heel on a sling back pump, the failure of an aircraft part can produce a tragedy of huge proportions involving hundreds of innocent people.

But there are protections, if not outright solutions – knowledge and common sense. Talk to any maintenance manager, spares honcho or grass roots A&P and the message is the same. There's no such thing as too much knowledge when acquiring spare parts for an aircraft.

Widely publicized a decade ago, the issue of bogus aircraft parts – officially called "Suspected Unapproved Parts" or SUPs – remains as critical now as ever, even if it's not as visible as before. Watch for that visibility to increase shortly and with that higher visibility a fresh wave of stories focusing on this heightened concern from those newly aware of the issue. ›

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The visibility will begin to increase later this month when Australia's Civil Aviation Safety Authority (CASA) and the US Federal Aviation Administration jointly host a conference on SUPs. Officials from across the aviation industry spectrum are expected to participate in the three-day conference during August 21-23 at the Sydney Hilton in Australia.

From a look at the preliminary agenda – available at www.casa.gov.au/sup2006 – the three days are geared to arm the participants with tools for spotting SUPs, identifying reliable suppliers, and preventing SUPs from entering the supply chain. Organizers say the conference will be useful to maintenance managers, parts suppliers, OEMs and any others involved in the manufacture of aircraft and parts, the certification of parts, and the repair and upkeep of aircraft.

Organizers have scripted the schedule to impart a detailed understanding of the processes that must be used to identify and avoid suspected unapproved aircraft parts. They also plan to fully detail the Federal Aviation Administration's important Suspected Unapproved Parts Program and the actions of the FAA's SUP Program Office.

MORE DEADLY THAN A BAD VIDEO...

Unapproved aircraft parts pose a significant threat to aviation safety for a number of reasons.

Sometimes the part can be labeled "Unapproved" for purely paper purposes. The primary concern is the paper trail that documents the design and production quality of a component. Without the paper trail, those qualities are unknown.

The part could be excellent or dismally shoddy; without proper documentation there's simply no way to know for sure without extensive testing – the testing that the parts manufacturer is supposed to do in order to certify the part as meeting standards.

Sometimes the part proves to be bogus after tests show that the accompanying paperwork is false. Identifying SUPs is challenging since they often appear the same as approved parts, putting the safety of the aircraft at risk without the knowledge of the parts user.

The skills of the counterfeiter can be so good that not only does the part appear genuine, so does the paperwork. This means airlines, maintenance organizations, aviation manufacturers and parts distributors need to create and adhere to systems for the detection and reporting of unapproved parts.

Further up the chain from the hangar-level user, aviation safety authorities like FAA and CASA take on the role of clearing house by assuring information on such suspected unapproved parts gets distributed to the aviation community in the hopes of assuring further detection and avoidance.

It's under the role of communicator that FAA and CASA want to bring together as many from the industry as possible to give those participants the latest information on suspected unapproved parts issues, steps employed to combat SUPs, and to give participants opportunities to question international experts.

IT'S WHAT SUP IS THAT MATTERS...

It's been more than a decade since the FAA and industry developed the agency's Suspected Unapproved Parts Program through the efforts of a joint task force. Since then, the SUPs program office has continued the fight against counterfeiters and paper incongruities. As the FAA puts it, the Suspected Unapproved Parts Program is its "focal point for the investigation of suspect aviation parts."

Despite the agency's vigilant surveillance and enforcement, with hundreds of millions of parts floating around the system and tens of thousands of new parts made each year, some bogus parts do manage to bypass regulatory controls and become part of the parts pool.

The discovery of such parts wins them the label of "suspect." From that point, the SUP Program office coordinates the investigations of these suspect parts, as well as providing SUP-related policy, training, and technical information and analyses.

The investigation may find that the part is genuine, but the paperwork is missing or botched; the investigation may find the paperwork counterfeit in attesting to the parts meeting FAA standards – or in restating the life left in a life-limited part. Sometimes the part is simply a cheap knock-off with good paperwork.

In any of these instances use of such a part renders the aircraft non-airworthy by law. Use of an actual sub-standard part can do worse and render the aircraft dangerous or even deadly. Such has been the case in ›

precious few instances, thanks to the efforts to catch and eliminate bogus parts. And some of those catches have been in the face of dedicated criminal acts to produce fraudulent parts.

For example, the manufacturer of blade clamps for a popular helicopter was found to have falsely attested to the testing and airworthiness of the part. Since the part is relatively hard to come by, the profit margin on a cheaply made blade clamp could be substantial – as well as deadly for the helicopter crew who loses a blade from those counterfeit clamps.

Conversely, engine parts that were well-made but not submitted to approval may well be capable of lasting their rated life – but if there's no way to know the part meets certification standards, using that part is another way of rolling the dice.

The key to avoiding these pitfalls is in knowing your sources and them knowing theirs.

TRACEABILITY

Four years ago the FAA and industry began work on a program to assure parts traceability, using special markings and codings not available to the general public. The goal: to create a permanent trail for tracing a part from its current owner and location all the way back to its point of origin.

As the program influences the world of new parts, the window of opportunity for counterfeiters will steadily narrow – but not close completely.

The new system does little for the millions of older spare parts produced before the new program – and still available.

Combating the potential for inadvertently accepting a bogus part can be a home-based effort, according to FAA guidelines.

- Knowing your suppliers, for example, and eschewing low-ball pitches from unknown suppliers is one way to protect against counterfeit spares entering the system.
- Another is checking labels of new parts against those of parts from a known source – parts already known to be legal.
- Watching for damaged shipping boxes or reused labels, smudged stamps or other indications of package tampering is also warranted (see sidebar to the right).

RESURRECTED LIKE A PHOENIX... BUT IS IT LEGAL?

According to some manufacturers, watching for a counterfeit aircraft isn't out of the question. Aircraft OEMs have long opposed the practice of building an aircraft around the old data plate of an aircraft previously destroyed. But unless the aircraft serial number was actually reported to the FAA as "Destroyed" knowing that an aircraft is original can be difficult. So the practice continues, despite the controversy and questionable legality.

One aircraft manufacturer in particular has gone to great lengths to label such rebuilds as "counterfeit" aircraft – Textron's Bell Helicopter.

Bell feels so strongly about the potential for people buying a helicopter rebuilt around the data plate of a previously destroyed aircraft that the company calls the entire machine "counterfeit" if it was previously "totaled" before being rebuilt using the original data plate.

"If someone else rebuilds/remanufactures an aircraft around the recovered aircraft identification data plate, the aircraft is a counterfeit and is not a Bell," the company said on its website.

The same page describes how potential buyers can avoid such a pitfall, including suggesting buyers check a government list of destroyed aircraft and their serial numbers, since it's the serial number – and not the "tail" or registration number – that stays with an aircraft throughout its existence.

You can find out more information from: www.bellhelicopter.com/en/support/index.cfm?content=flightsafety/counterfeit.cfm&g_folder=header_10

THE EFFORT CONTINUES...

Forewarned is forearmed, the saying goes, and this piece serves merely an attention getter. Far more information in greater detail is available from a number of sources, particularly the FAA.

› For more information on the FAA's Suspected Unapproved Parts Program, visit the agency's Website at: http://www.faa.gov/aircraft/safety/programs/sups/

FAA'S TIPS FOR IDENTIFYING BOGUS PARTS

Every shop or distributor should establish procedures before purchasing parts in order to establish qualified suppliers authorized to make or move FAA approved parts. The following criteria can help identify and screen out potential SUPs suppliers:

1. Lowball prices – if the price quoted or advertised is significantly lower than the price from other suppliers of the same part;
2. Suspiciously fast service – if the delivery schedule for an out-of-stock part is significantly shorter than from others;
3. Data shortage – if the supplier seems unable or unwilling to substantiate conformity of the part;
4. Papertrail shortage – if the supplier seems slow, or unable to document FAA approval for the part.

If any of these types of situations arise, you should:

- ➤ Inspect product containers for damage, another supplier's name, or no markings at all;
- ➤ Crosscheck purchase orders with the delivery receipts for proper part number or component history card;
- ➤ Develop a system for tracking the shelf or service life of parts so as not to inadvertently use a part with an expired life limit;
- ➤ Verify that part identification markings aren't altered or otherwise tampered with – things like a serial number stamped over, an improper label, a missing label or a serial number stamped at a spot different than usual;
- ➤ Inspect parts for visual defects or abnormalities, such as altered or unusual surface finishes, the absence of, or variation in, required plating, any evidence of prior use, new paint, old scratches, pitting, corrosion or any sign of an attempted repair;
- ➤ Audit your supplier to ensure they establish and maintain the quality requirements specified in the purchase order.

If you find evidence of SUPs – or have suspicions that you are being supplied with SUPs – you have two avenues for reporting:

1. FAA Form 8120-11, Suspected Unapproved Parts Notification, (obtained from your local FAA office or in Advisory Circular 21-29) should be completed and forwarded immediately to:

Federal Aviation Administration
System Surveillance and Analysis
Division, AIR-300
P.O. Box 17030
Washington, DC 20041
USA

2. Suspected unapproved parts may also be reported via the toll free
FAA Aviation Safety Hotline: +1-800-255-1111

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